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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/010,800	12/07/2001	Jae-Duck Lee	678-706 (P9742)	7307

7590 07/20/2004

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EXAMINER

DOAN, KIET M

ART UNIT	PAPER NUMBER
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2683

DATE MAILED: 07/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/010,800

Applicant(s)

LEE, JAE-DUCK

Examiner

Kiet Doan

Art Unit

2683

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/07/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

The drawings were received on 12-07-2001 and have been reviewed examiner

### ***Priority***

Examiner notices there is no priority document in this file (Foreign Application)  
Republic Of Korea 2001-5242 02/03/2001.

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 12/07/2004. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. **Claims 1-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over Soliman (Patent No. 6,321,090) in view of Otsuka et al. (Patent No. 6,741,859).

Consider **claim 1 and 4**, Soliman teaches a method comprising step of: setting an area of services covered with a frequency assignment (FA) unavailable to adjacent stations to be a boundary cell (Col 7, Lines 12-39, Fig. 3 No. 88 teach border cell/No. 72, 74, 76, 78, 80, 82 as adjacent station with frequency unavailable). Soliman fail to teaches a method for performing a hard hand-off in a cellular mobile communication system, the method comprising the steps of: entering into the set boundary cell by a mobile communication terminal during communication; and searching FAs of adjacent stations excluding a base station currently engaged in communication with said mobile communication terminal so as to determine a target FA, with which the mobile communication terminal is to perform the hard hand-off. In an analogous art, Otsuka teaches "CDMA mobile communication system accommodating increased number of mobile stations". Further, Otsuka disclosed a method for performing a hard hand-off in a cellular mobile communication system (Col 11, Lines 46-51, Fig. 12) the method comprising the steps of: entering into the set boundary cell by a mobile communication terminal during communication (Col 14, Lines 5-17, Col 16, Lines 43-50 both teach move forward and establish a call such as entering the boundary cell/service are) and searching FAs of adjacent stations excluding a base station currently engaged in communication with said mobile communication terminal so as to determine a target FA, with which the mobile communication terminal is to perform the hard hand-off (Col 10, Lines 15-19, Col 16, Lines 40-56 teach search/mobile communication perform hard hand-off).

Therefore, it would have been obvious at the time that the invention was made that person having ordinary skill in the art to include, within Soliman system, CDMA mobile communication, as taught by Otsuka to provide the system that preventing deterioration of call qualities and allowing the users making longer time call in the boundary cell.

Consider **claims 2 and 5**, Otsuka further disclosed wherein the target FA is determined by the mobile communication terminal through searching common FAs of adjacent stations to perform the hard hand-off therewith (Col 11, Lines 43-51, Col 12 Lines 37-41 both teach frequency searching station to perform hard hand-off).

Consider **claims 3 and 6**, Otsuka further disclosed wherein determination of the target FA includes a step of recognizing that the mobile communication terminal is currently engaged in communication in the boundary cell, and commanding the mobile communication terminal to search FAs of the adjacent stations excluding the base station currently engaged in communication with said mobile communication terminal by means of a base station controller (BSC), which controls the hand-off of the mobile communication terminal (Col 12, Lines 37-41, Col 13, Line 42-58, Fig. 2 teach base station controller control the hard hand-off).

Consider **claim 7**, Otsuka teaches a method for performing a hard hand-off in a cellular mobile communication system including at least two base stations for providing a mobile communication terminal with services by having service areas that share at least one FA and can be overlapped (Col 13, Lines 30-38 teach Frequency overlapped) and a base station controller (BSC) for controlling the hand-off of the mobile communication terminal (Col 13, Lines 42-58 teach BSC controlling the hand-off) the method comprising the steps of: setting an area of services covered by an FA unavailable to adjacent stations to be a boundary cell (Fig. 1 between point c and d using RF2 showing frequency unavailable) connecting communication with a first sector and a second sector by a softer hand-off while the mobile communication terminal moves from the first sector to the second sector of the base station currently engaged in communication with said mobile communication terminal (Col 11, Lines 58-67, Fig. 1 teach engages softer hand-off) recognizing the second sector to be the boundary cell, and commanding the mobile communication terminal to search common FAs of the adjacent stations, except the base station currently engaged in communication, by the BSC (Col 12, Lines 31-41 teach mobile station found position such as search common FA adjacent station) searching common FAs of the adjacent stations by the mobile communication terminal in response to the command, and reporting the searched results to the BSC (Col 12, Lines 31-41, Col 14, Lines 35-42, Fig. 2 teach search frequency and report to BSC) determining a target FA, with which the BSC is to perform the hand-off by using the searched results if conditions for performing the hard hand-off

are satisfied (Col 16, Lines 31-67 teach BSC perform the hand-off) and performing the hard hand-off with the determined target FA by disconnecting the communication with the first sector and the second sector from the mobile communication terminal under a command of the BSC (Col 16, Lines 60-65, Col 17, Lines 1-12 both teach trigger/stop transmission such as disconnecting communication).

### ***Conclusion***

The prior art made of record and not relied upon is consider pertinent to applicant's disclosed:

- |                         |                            |
|-------------------------|----------------------------|
| 1. Otsuka et al.        | U.S Patent No. 6,741,859   |
| 2. Soliman              | U.S patent No. 6,321,090   |
| 3. Lee                  | U.S patent No. 6,434,387   |
| 4. Schiff et al.        | U.S patent No. 6,549,780   |
| 5. Rohani               | U.S patent No. 5,999,522   |
| 6. Satarasinghe         | U.S patent No. 6,026,301   |
| 7. Tiedmann, JR. et al. | Public No. US 2002/0032034 |

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kiet Doan whose telephone number is 703-305-4749.

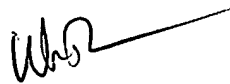
The examiner can normally be reached on 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kiet Doan  
Patent examiner  
07/09/2004



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